PIC

	D7	D6	D5	D4	D3	D2	D1	D0
CALL CODE	1	1	0	0	1	1	0	1

A. FIRST INTERRUPT VECTOR BYTE, MCS80/85 MODE

IR	Interval = 4							
	D7	D6	D5	D4	D3	D2	D1	D0
7	A7	A6	A5	1	1	1	0	0
6	A7	A6	A5	1	1	0	0	0
5	A7	A6	A5	1	0	1	0	0
4	A7	A6	A5	1	0	0	0	0
3	A7	A6	A5	0	1	1	0	0
2	A7	A6	A5	0	1	0	0	0
1	A7	A6	A5	0	0	1	0	0
0	A7	A6	A5	0	0	0	0	0

IR	Interval = 8							
	D7	D6	D5	D4	D3	D2	D1	D0
7	A7	A6	1	1	1	0	0	0
6	A7	A6	1	1	0	0	0	0
5	A7	A6	1	0	1	0	0	0
4	A7	A6	1	0	0	0	0	0
3	A7	A6	0	1	1	0	0	0
2	A7	A6	0	1	0	0	0	0
1	A7	A6	0	0	1	0	0	0
0	A7	A6	0	0	0	0	0	0

B. SECOND INTERRUPT VECTOR BYTE, MCS80/85 MODE

D7	D6	D5	D4	D3	D2	D1	D0
A15	A14	A13	A12	A11	A10	A9	A8

C. THIRD INTERRUPT VECTOR BYTE, MCS80/85 MODE

Figure 9. 9A-C. Interrupt-Vector Bytes for 8259A, MCS 80/85 Mode

Aansl: A_0/$\overline{CS}$/DATA/$\overline{RD}$/$\overline{WR}$/INT/$\overline{INTA}$/CAS0 1 2/~~IRQ0-7~~

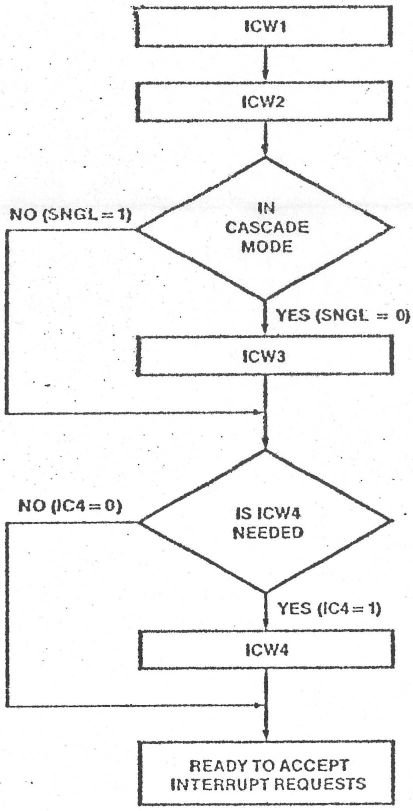
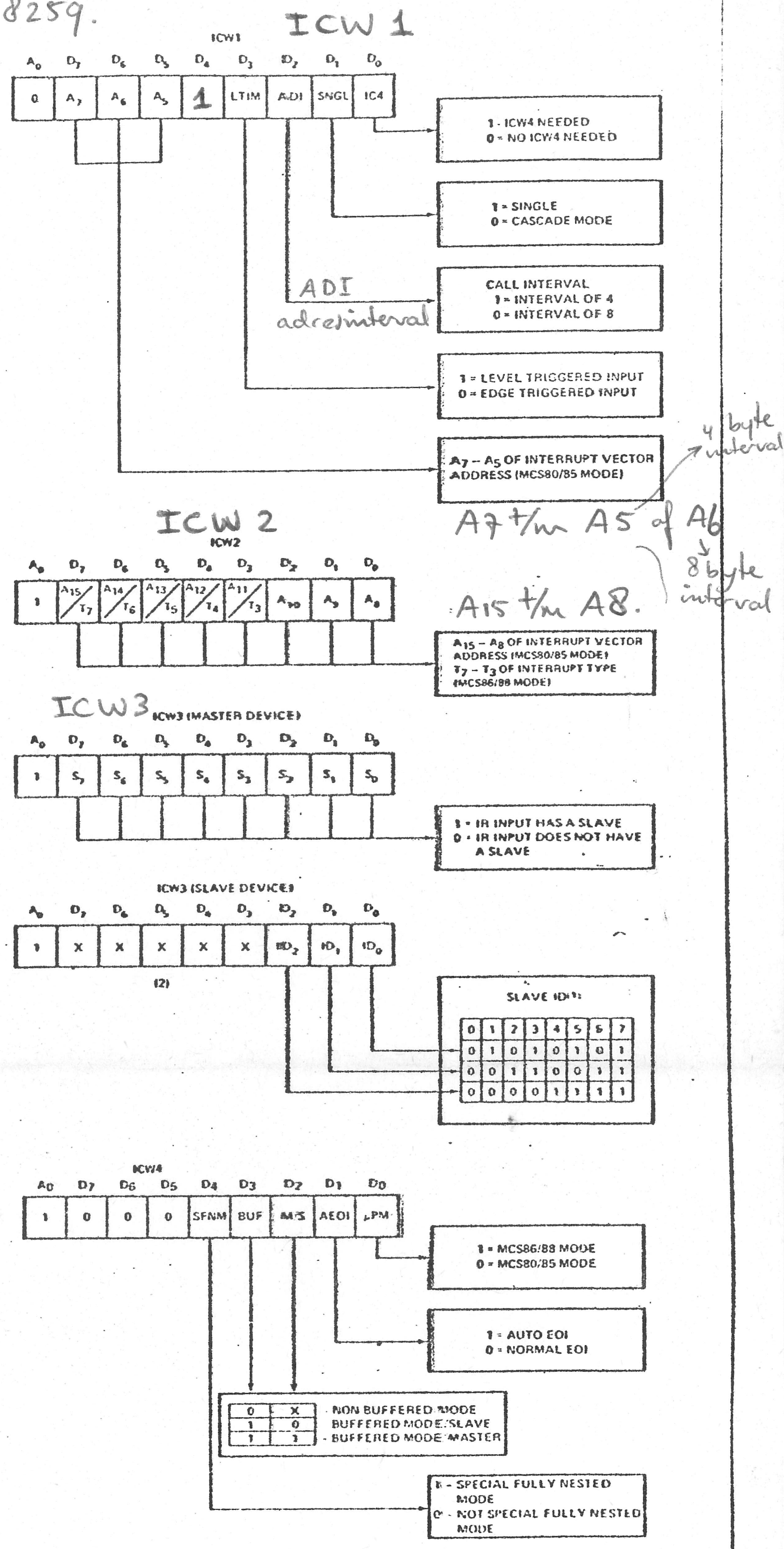


Figure 20. Initialization Flow

8259.


ICW 1
ICW1
A0 D7 D6 D5 D4 D3 D2 D1 D0
0 A7 A6 A5 1 LTIM ADI SNGL IC4
1 - ICW4 NEEDED
0 - NO ICW4 NEEDED
1 - SINGLE
0 - CASCADE MODE
ADI
adresinterval
CALL INTERVAL
1 - INTERVAL OF 4
0 - INTERVAL OF 8
1 - LEVEL TRIGGERED INPUT
0 - EDGE TRIGGERED INPUT
A7 – A5 OF INTERRUPT VECTOR ADDRESS (MCS80/85 MODE)
4 byte interval
A7 t/m A5 of A6
8 byte interval
ICW 2
ICW2
1 A15/T7 A14/T6 A13/T5 A12/T4 A11/T3 A10 A9 A8
A15 t/m A8.
A15 – A8 OF INTERRUPT VECTOR ADDRESS (MCS80/85 MODE)
T7 – T3 OF INTERRUPT TYPE (MCS86/88 MODE)
ICW3
ICW3 (MASTER DEVICE)
1 S7 S6 S5 S4 S3 S2 S1 S0
1 - IR INPUT HAS A SLAVE
0 - IR INPUT DOES NOT HAVE A SLAVE
ICW3 (SLAVE DEVICE)
1 X X X X X ID2 ID1 ID0
(2)
SLAVE ID (1)
0 1 2 3 4 5 6 7
0 1 0 1 0 1 0 1
0 0 1 1 0 0 1 1
0 0 0 0 1 1 1 1
ICW4
1 0 0 0 SFNM BUF M/S AEOI µPM
1 - MCS86/88 MODE
0 - MCS80/85 MODE
1 - AUTO EOI
0 - NORMAL EOI
0 X - NON BUFFERED MODE
1 0 - BUFFERED MODE/SLAVE
1 1 - BUFFERED MODE/MASTER
1 - SPECIAL FULLY NESTED MODE
0 - NOT SPECIAL FULLY NESTED MODE

NOTE 1 SLAVE ID IS EQUAL TO THE CORRESPONDING MASTER IR INPUT
NOTE 2 X INDICATES "DON'T CARE"

SOME OF THE TERMINOLOGY USED MAY DIFFER SLIGHTLY FROM EXISTING 8259A DATA SHEETS. THIS IS DONE TO BETTER CLARIFY AND EXPLAIN THE PROGRAMMING OF THE 8259A, THE OPERATIONAL RESULTS REMAIN THE SAME.

Figure 21. Initialization Command Words (ICWS) Programming Format